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ABSTRACT

There are no available measures that assess family interaction from a comprehensive theoretical perspective. This study reports analyses of the measurement integrity of scores from a measure developed to offer a comprehensive assessment. The preliminary version of the Family Interaction Inventory (FII) is a 24-scale instrument with 5 items per scale, resulting in a 120-item inventory that is intended to assess global dynamics of family interaction. A 10-item version of the short form of the Marlowe-Crowne Social Desirability Scale was embedded in the 120 items to assess the effects of social desirability on the FII. Subjects were 664 college undergraduates, of whom about half were male. A subgroup of 76 students took the FII twice to study test-retest reliability. Results indicate that the measure has promise, and tends to yield reliable scores. Further analyses and studies must be conducted to determine the norms based on the respondents' demographics. The test does not appear to be very sensitive to differences in gender and ethnicity. Seven tables present study data, and a 21-item list of references is included. Appendix A contains the FII. (SLD)

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Exploring the Technical Adequacy of the Family Interaction Inventory

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ABSTRACT

There are no available measures that assess family interaction from a comprehensive theoretical perspective. The present study reports analyses of the measurement integrity of scores from a measure designed to offer a comprehensive assessment. The Family Interaction Inventory assesses interaction on 24 scales plus a social desirability scale. Subjects were 664 young adults. Results suggest that the measure has promise, though further analyses and studies remain to be conducted.

The theoretical importance of family interaction has been the focus of the behavioral sciences for the past several decades. This burgeoning interest is related to the effects of studies of family interaction on psychology and other related fields. Family sociology, systems and communication theory, child psychology, and social learning theory are all related and involve issues which pertain to family functioning and interaction (Jacob & Tennenbaum, 1988). The emerging interest in family interaction may also be related to an increased awareness that the etiology of psychopathology can often be traced to family of origin issues (Jacob, 1987).

This has implications for the diagnosis, treatment, and prevention of dysfunctional behavior for many consumers of mental health services. Indeed, Veroff, Kulka, and Douvan (1981) cite interpersonal problems as the most frequent presenting problem for individuals who seek counseling in this country. In any event, the interaction within a family has become an important area of research for behavioral scientists.

Jacob (1987) has contended that the field of family studies has, for the most part, concentrated on less meaningful issues. He argued that researchers have focused on either the individual family member or the total family system while neglecting the interaction process itself that occurs in any family unit. He felt that this should be the cornerstone of family studies in that this process can lead to either healthy functioning or psychopathology.

Jacob also postulated that family interaction studies should

involve two important tenets. The first tenet involved the identification of family patterns and processes that cause or are caused by dysfunctional behavior. These are the unhealthy interactions that can occur in a family. The second tenet included the integration of this information into the family studies literature which is concerned with the effects of genetic, cultural, and personality factors on the psychopathology within the family.

The purpose of the present study was the development of an instrument which is responsive to the first tenet. It was hoped that the development of a comprehensive measure would have impacts on the larger picture more closely associated with the second tenet.

An objective instrument designed to measure an individual's perceptions of the interaction in his/her family would have significant utility in both clinical and research settings. Unfortunately, the field of family research has lagged behind other behavioral sciences in the scientific development of appropriate measures. Some researchers have argued that no recent integrative studies of family interaction have been developed in the fields of family sociology and psychiatry (Bradbury & Fincham, 1990). This seems unusual since many useful theories do exist in the literature and since it has been recognized that there is a need for interactional research in this field. These researchers further argue that a testable theory whose constructs can be defined and

reliably measured are imperative for the sound research of family interaction.

Several currently available assessment devices of family functioning were reviewed to determine if a need does in fact exist for a cross-theoretical family interaction measure. Several sources were accessed to achieve this review (Bailey & Simeonsson, 1988; Buehler, 1990; Busch-Rossnagle, 1985; Franzoi, 1985; Grotevant & Carlson, 1989; Holden, 1990; LaCoste, Ginter, & Whipple, 1987; Lambert, 1985; Larzelere & Klein, 1986; Lowman, 1981; Robertson & Hyde, 1982; Schumm, 1990; Sweetland & Keyser, 1983). The criteria for choosing the reviewed instruments were that they most resembled the type of measure that was being developed, had good psychometric properties, or were commonly used in the field. The results of this investigation indicated that there was a gap in the literature regarding the measurement of family interaction using a cross-theoretical model.

Yurich, Robinson, Kapes, Moreno, and Zellner (1991) took the initial steps to construct an instrument which addressed this gap in the literature. The purpose of their study was to develop a self-report questionnaire measuring family interaction using a cross-theoretical approach which would follow the above recommendations and also have adequate clinical utility. The Family Interaction Inventory (FII) measures cross-theoretical aspects of family interaction. The norms, reliability, and validity of scores fron this instrument, however, have yet to be established.

Statement of the Problem

The focus of the current research was to determine the initial norms and reliability of the scales of the Family Interaction Inventory (Yurich et al., 1991). The current literature in this area indicates that while there are several measures available, they are lacking due to the omission of cross-theoretical constructs of family interaction. This study utilized cross-theoretical constructs in the development and evaluation of a measure that has good psychometric properties and adequate clinical utility.

The specific questions that this study addressed were:

1. Do the scale means and standard deviations differ across, or are they related to, such demographic variables as gender, age, ethnicity, academic achievement, number of siblings, birth order, marital status, parent's marital status, and family SES?
2. What is the reliability of the FII scores as assessed by internal consistency, test-retest, and alternate forms reliability analyses?
3. Is there a relationship between the Social Desirability Scale and scale scores from the FII?

Methodology

Population and Sample

The sample represented the general population of undergraduate college students. The group was drawn from a pool of male and female undergraduates from a large southwestern university. The

researchers obtained approval from the Institutional Review Board for Human Subjects in Research prior to administering the instrument to the undergraduate students at the university. The courses were summer session classes in business, health and education, and educational psychology classes.

The total number of subjects administered the test were 671. It was determined initially that some subjects had skipped many of the items. However, the vast majority of the subjects omitted only 5 or less items. It was therefore determined that any subject who omitted more than 5 items would be omitted from the final subject pool. Since there were 7 subjects who fell into this category, the final sample size was 664.

Table 1 presents an overview of the demographic characteristics of the sample. As noted, the sample was about half male and half female. On the aggregate these were older and brighter students, with the average age being about 21, 79% of the sample being juniors and seniors, and an average GPA of 2.79 (SD = .5). The majority of the students were white and single, as one would expect from an undergraduate sample from this particular university. The majority of the students were majoring in either liberal arts, business, or education. The average respondent came from a family of 2.79 (SD = 1.3) and 91% were either first, second, or third born. While most of the mother's of these students were educated, 60% of the father's were college graduates or beyond. This is the profile that one would expect from a large southwestern university.

Insert Table 1 about here

Another important variable that was assessed was labeled family status. This variable attempted to assess the stability of the respondent's family of origin. The respondents were asked if their biological parents were married, divorced, or deceased. If they were divorced or deceased the respondent was asked who had raised them. The sample was predominantly stable as measured in this way, with 76% of the sample coming from families which were still intact. Interestingly, of the remaining 24% from divorced or deceased families, 16% were raised by their mother, 2% were raised by their father, and 2% were raised by someone else. Roughly 5% of the sample indicated that none of the above adequately described their situation.

Instrumentation

The preliminary version of the Family Interaction Inventory (FII) (Yurich et al., 1991) was the instrument utilized in the present study. The FII is a 24 scale instrument with 5 items per scale resulting in a 120 item inventory. It is intended to assess the global dynamics of family interaction. The norms and reliability have not been established at this point.

A 10 item version of the short-form of the Marlowe-Crowne Social Desirability Scale (M-C Form A) was embedded in the above 120 items to assess the effects of social desirability on the FII. The internal consistency of the M-C Form A scores in one administration was been found to be .74 (Reynolds, 1982). Zook and

Sipps (1985) did a cross validation study of the short form and determined that the short form can be used instead of the regular form without significant loss of reliability. Ten of the 11 items were used to allow for ease of embedding these items within the 5 sets of 24 items within the FII.

A demographic sheet was developed and included to obtain the aforementioned demographic data from each respondent. The demographic variables assessed on this sheet were gender, age, GPA, marital status, year in college, college major, college credits earned, ethnicity, number of siblings, birth order, highest educational level achieved by parents, and family of origin status.

At the end of the instrument an additional question was added to assess if the individual was responding to the notion of parents as a collective entity (both mother and father together) or primarily to one (the mother or father). This question was used to evaluate whether or not different interpretations of the term "parent" affected one's responses to selected items. The FII therefore included 131 likert-type items, which were arranged in ascending (A) and descending (D) orders to yield two forms (A and D). A copy of the final version of the FII with the demographic sheet is attached as Appendix A.

A pilot version of the FII was administered to a group of three expert judges and five students who were representative of the sample. Modifications to the instrument, demographic sheet, and administration protocol were made based on the results of this

pilot study. These changes included changes in instructional procedures and related factors.

Procedure

The undergraduate students who participated in the sample were approached during regular class sessions with the instructor's approval. These students were asked to complete the demographic sheet and the FII. The instructions given to the classrooms of students included a brief description of the nature of the study and encouragement to be as open and honest as possible. The students were also advised that the study was strictly voluntary and that the results were to remain anonymous. Approximately half of the sample randomly received form A and the remaining half received form D.

A sub-group of 86 students from the same university were selected and administered the FII twice within a two week time period. The purpose of this was to determine the test-retest and the alternate form reliability using a design in which test forms and test forms order were counterbalanced (Forms AA, AD, DD, DA). Since it was desired to obtain an approximately equal number of males and females and to obtain a suitable number of students, the criteria for selection of these classes included the ratio of males to females as well as the total number of students enrolled.

The total number of classes used was two and this resulted in the 86 students. It was again discovered that that some subjects had skipped many of the items and that a few were not available for the second testing. However, the preponderance of the subjects

omitted four or less items. It was therefore determined that any subject who omitted more than four items would be omitted from the final subject pool. Since there were 10 subjects who fell into this category, the final sample size was 76. A code was placed on the instrument to link the two administrations of the test together and to preserve anonymity.

Analysis

Question 1 was answered by the use of one-way ANOVAs and correlations to determine the difference between/among levels of, or relationship between, the demographic variables and the scale scores of the FII. The differences between the standard deviations were assessed by the use of the Bartlett-Box F ratio.

Question 2 was answered by the determination of the reliability in several different ways. The internal consistency reliability was determined using Cronbach's alpha. The test-retest and alternate form reliability were determined using Pearson product-moment correlations with repeated measurements over two weeks.

Question 3 was answered using Pearson product-moment correlations between the embedded Social Desirability Scale and scale scores from the FII.

Results

Introduction

Reported here are the results of the analyzed data in the initial determination of the norms and reliability of the Family Interaction Inventory (Yurich et al., 1991). The 664 subjects from

the non-clinical sample were used to obtain the scale means and standard deviations.

It is important to note that for the scales of the FII the lowest possible score (if the respondent put 1, or "strongly disagree", on all 5 items of that scale) was 5. The highest possible score for a scale (if the respondent put 5, or "strongly agree", on all 5 items of that scale) was 25. All of the items were written and scored in the positive direction. Therefore, when the scale and item scores were higher there was less family dysfunction indicated. Conversely, when the scale and item scores were lower there was more family dysfunction indicated.

The Social Desirability Scale was scored differently. This scale contained 10 items and therefore the highest possible score was 50. On this scale the higher scores were obtained by those respondents not attempting to behave in a socially desirable manner. Conversely, the lower scores were obtained by those respondents who were attempting to behave in a socially desirable manner.

These initial scale scores are summarized in Table 2. The mean scale scores ranged from a low of 14.65 on the Intellectual-Emotional construct to a high of 20.27 on Behavior Control. The standard deviations of the scores ranged from a low of 2.45 on Enmeshment to a high of 4.46 on Debts/Entitlements. The total score average, which includes results of each of the 24 scales and the Social Desirability Scale, was 466.41 with a standard deviation of 61.56.

Insert Table 2 about here

Question 1: How do the scale means and standard deviations differ across, or relate to, such demographic variables as gender, age, ethnicity, academic achievement, number of siblings, birth order, marital status, parent's education, and family status?

The scale means across these demographic variables were analyzed in two ways. The categorical demographic variables (gender, major, marital status, class, ethnicity, number of children in the family, birth order, mother's education, father's education, and family status) were analyzed by a series of one-way ANOVAS. Those demographic variables which were expressed with interval data (age, GPA, college credits) were analyzed using correlation coefficients.

The results of the analysis of scale means of the instrument across the categorical variables are summarized in Table 3. A few of these findings are noteworthy. The gender of the respondents did not have a differential effect across the scales. In fact, the males and females scored differently only on the Triangulation, Intellectual/Emotional, and Social Desirability scales with the males scoring higher in each case. Another important finding is the fact that the different ethnic groups which were included in the sample did not score significantly differently across the scales. In addition, the respondent's different major, class, number of children in the family, and birth order did not affect the scale scores significantly. The large sample size employed in

this study means that such results were not an artifact of statistical significance testing, at least in the present study.

Insert Table 3 about here

However, it seems that there were differences based on the marital status of the respondent and the educational level achieved by the parents. In addition, the family status of the respondent proved to be a noteworthy influence on almost every scale of this measure. The appropriate post hoc analysis will be performed in future analyses to determine which levels of these variables contributed to the results.

Table 4 indicates the comparison of the standard deviations (or variances) of each of the scales across the demographic variables using Bartlett-Box F ratios. These results indicated that there were some standard deviations from the different levels of the demographic variables which were different to a statistically significant degree.

Insert Table 4 about here

Table 5 reports the relationships between the intervally-scored variables and the scales. In viewing these results it is important to note that the sample size is quite large and therefore very small correlations were significant. In any event it can be seen that age is inversely related to several of the scales. Therefore, as age increases, the tendency was for scores on these scales to become lower, or more in the

dysfunctional family range. Perhaps as one becomes older there is a tendency to view the family in a more critical fashion. Also, GPA and number of college credits were not related to scores on the scales of this instrument.

Insert Table 5 about here

Question 2: What is the reliability of FII scores as assessed by internal consistency, test-retest, and alternate forms reliability analyses?

The results of the reliability studies were promising and indicated that on the aggregate this instrument yields reliable scores when administered in this sort of population. Cronbach's alpha, as indicated in Table 6, ranged from a low of .13 on the Enmeshment scale scores to a high of .90 on Problem Solving scores. Cronbach's alpha for scores on the whole instrument was .98. This indicated that in spite of lowered internal consistency of scores on some of the subscales, the instrument on the whole was measuring the same phenomenon. Subsequent factor studies of the instrument will be undertaken to further explore the factor structure underlying FII responses.

As previously mentioned, the test-retest interval was two weeks. These results, as summarized in Table 6, indicated that the phenomenon being measured by this instrument was quite stable across this time span. These reliability scores ranged from .59 on Enmeshment to .95 on Stagnation. The total test-retest reliability was .99. These results indicate that, in general, one's view of

family interaction tends to remain consistent across short periods of time.

Insert Table 6 about here

The Alternate-Form reliability analysis was done in conjunction with the test-retest analysis and is also summarized in Table 6. This analysis indicates that on the whole there were only minimal changes associated with differences in the order of administration of items or forms of instrument. Except for a few isolated lowered r's (Triangulation, Rigid Boundaries, Diffuse Boundaries, Enmeshment, Scapegoating, Roles, Projection, Intellectual/Affection, and Exploitation) these results indicate that the reliability tended to be stable across variations in order. This lends more credence to the idea that the phenomenon being measured is, in fact, stable and the instrument tends to yield reliable scores.

Question 3: Is there a relationship between the Social Desirability Scale and the scale scores from the FII?

Table 7 indicates that there was a statistically significant inverse relationship between the embedded Social Desirability Scale and the scales of the FII. Therefore, individuals with tendencies to make themselves appear better (with lower scores on the Social Desirability Scale) tended to score in the less dysfunctional range (with higher scores on the FII). Individuals with tendencies to make themselves appear worse (with higher scores on the Social Desirability Scale) tended to score in the more dysfunctional range

(with lower scores on the FII). This has important implications for the interpretation of this instrument.

Insert Table 7 about here

Conclusions

Based on these results it is apparent that the FII is an instrument with some promise. This research has demonstrated that the measure tends to yield reliable scores. This is not, however, a conclusion that the measure is reliable, since reliability as a property does not innure to tests (Thompson, 1992).

Other results indicated that there is a need for further analysis to determine the norms based on the respondent's demographics. Separate norms based on age, marital status, parents education, and family status must be created to provide a clearer picture of what has occurred in the respondent's family of origin.

It is important to note that this test was not very sensitive to differences in gender and ethnicity. In addition, the statistically significant inverse relationship between the scale scores and the Social Desirability Scale has implications for use in counseling. Perhaps the scoring system should employ a correction value similar to that used in the MMPI.

The results of the reliability analysis were generally positive. However, some of the scales yield data with low internal consistency, indicating a poor fit among the items in that scale. Future reliability studies should include generalizability analysis to determine how the error variance in partitioned. In addition it

would be useful to determine the item/total correlation and the reliability of the scales if a particular item is omitted. This type of item analysis will better determine which items should be retained and which should be discarded.

This notion of a cross-theoretical instrument offers a different perspective to the assessment of interaction within a family. It appears that the FII offers a promising beginning toward developing such an instrument. Additional research to explore the factor structure and the validity coefficients associated with FII scores remains to be presented in future reports.

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Table 1
Sample Description

Gender		Age		GPA	
male	298 (45%)	X = 21.2		X = 2.79	
female	366 (55%)	SD = 2.94		SD = .488	
Marital Status		**Class Standing**			
single	603 (90%)	Freshman	99 (15%)	Senior	358 (54%)
married	50 (8%)	Soph	19 (3%)	Grad	12 (2%)
divorced	10 (2%)	Junior	170 (25%)	Other	6 (1%)

Major

Liberal Arts	159 (24%)	Education	127 (19%)
Business	175 (27%)	Engineering	41 (6%)
Science	70 (11%)	Agricultural	42 (6%)
Architecture	3 (1%)	Undecided	41 (6%)

Ethnicity

				# of Child/Family
White	569 (86%)	Latino	44 (7%)	X = 2.79
Black	33 (5%)	Asian	14 (2%)	SD = 1.28
Other	4 (1%)			

Birth Order

First Born	288 (44%)	Sixth Born	5 (.75%)
Second Born	222 (34%)	Seventh Born	5 (.75%)
Third Born	86 (13%)	Eighth Born	1 (.15%)
Fourth Born	34 (5%)	Eleventh Born	1 (.15%)
Fifth Born	17 (2.5%)		

Mother's Education

Sixth Grade	2 (.3%)	High School Graduate	213 (32%)
Eighth Grade	2 (.3%)	1 Year College	45 (7%)
Ninth Grade	4 (.6%)	2 Years College	98 (15%)
Tenth Grade	5 (.75%)	3 Years College	20 (3%)
Eleventh Grade	6 (1%)	College Graduate	167 (25%)
		Graduate School	99 (15%)

Father's Education

Third Grade	2 (.3%)	High School Graduate	129 (20%)
Sixth Grade	2 (.3%)	1 Year College	27 (4%)
Seventh Grade	1 (.1%)	2 Years College	60 (9%)
Eighth Grade	5 (.7%)	3 Years College	22 (3%)
Ninth Grade	4 (.6%)	College Graduate	219 (33%)
Tenth Grade	4 (.6%)	Graduate School	176 (27%)
Eleventh Grade	4 (.6%)		

Family Status

Parent's married and living together		504 (76%)	
Parent's divorced/deceased and respondent raised by:			
mother	104 (16%)	someone else	10 (2%)
father	12 (2%)	other than above	34 (5%)

Table 2

Scale Means and Standard Deviations

Scale	Mean	SD
Triangulation	16.98	4.36
Communication	16.56	4.22
Intimacy	18.12	4.24
Trust	19.74	2.94
Stress	18.07	3.96
Dev. Life Cycles	18.92	3.63
Rigid Boundaries	17.96	3.56
Disengaged	18.88	3.59
Diffuse Boundaries	19.43	2.98
Enmeshment	17.07	2.45
Scapegoating	17.52	3.59
Roles	17.70	3.50
Denial	17.84	3.93
Loyalty	16.33	3.02
Power	18.07	3.90
Stagnation	18.90	3.70
Behavior Control	20.27	2.99
Problem Solving	17.54	4.22
Projection	17.85	3.34
Intell/Emotional	14.65	3.09
Family of Origin	19.06	4.42
Exploitation	20.03	3.55
Debts/Entitlements	18.92	4.46
Family Culture	19.40	3.27
Social Desirability	30.52	5.67
Total	466.41	61.56

Table 3
One Way Anova for Scales by Categorical Variables (n=664)

Scale	Variable				
	Gender	Major	Marital Status	Class	Ethnicity
Triang	7.25**	2.01	3.22*	.463	1.45
Commun	.116	1.28	4.66**	.913	.453
Intim	3.05	1.26	6.89**	1.28	.307
Trust	.182	1.43	2.13	1.06	1.13
Stress	.234	1.06	3.09*	1.41	.513
Devlmt	1.14	.682	3.00	2.20	.289
Rigidb	.301	.821	4.98**	3.05**	1.04
Diseng	1.39	1.06	.403	1.14	.832
Diffub	3.29	.755	.667	3.89**	.126
Enmesh	.070	.774	1.31	.960	.515
Scpgt	.655	1.00	.804	.431	1.66
Roles	1.14	2.18*	.029	1.18	1.08
Denial	.044	1.30	5.86**	1.47	.285
Loyal	.001	1.34	2.00	.679	1.74
Power	1.71	1.30	2.48	2.62*	.526
Stagnt	.155	1.15	4.18*	2.95*	.660
Behcon	.551	.865	.572	.548	.667
Prbslv	.407	.939	3.21*	1.00	.234
Projtn	1.05	1.45	2.41	.785	.191
Intell	32.2**	1.25	1.29	.389	1.67
Famorg	.661	4.77**	2.15	2.80*	.142
Explitn	1.37	1.25	1.62	2.00	.347
Debts	1.36	.985	.967	1.98	.130
Cultr	.050	1.07	4.17*	1.31	.627
Socdsr	11.47**	2.83**	.278	1.13	.352
Total	.070	1.42	3.24*	1.77	.508

Note. The values represent F ratios.

* $p < .05$. ** $p < .01$.

Table 3 (continued)

Scale	Variable				
	# Children in Family	Birth Order	Mother Eductn	Father Eductn	Family Status
Triang	.631	.822	1.31	2.69**	29.5**
Commun	.757	1.82	2.20*	1.33	8.96**
Intim	1.15	1.98*	1.56	1.70	12.4**
Trust	2.35*	1.45	.971	3.28**	10.3**
Stress	.776	.673	1.66	2.12*	8.07**
Devlmt	.651	.945	1.63	2.02*	8.06**
Rigidb	2.20*	3.50**	1.38	1.27	4.14**
Diseng	.718	1.71	1.67	.873	8.40**
Diffub	1.09	2.02*	1.18	1.39	2.79*
Enmesh	.718	2.16*	2.35**	1.68	1.54
Scpgt	2.23*	3.26**	.582	2.68**	5.44**
Roles	1.02	1.69	.624	1.74	.578
Denial	.790	1.68	2.66**	2.14*	6.05**
Loyal	1.70	1.35	1.42	1.99*	.325
Power	1.30	1.73	1.65	2.10*	16.4**
Stagnt	.900	1.72	2.02*	2.03*	6.37**
Behcon	2.84**	2.65**	1.21	1.41	8.96**
Prbslv	.712	1.48	2.11*	2.44**	7.26**
Projtn	1.34	1.23	1.43	2.37**	9.99**
Intell	.939	1.51	2.07*	2.86**	3.74**
Famorg	.329	.606	1.04	1.83*	7.63**
Explitn	1.24	1.24	1.47	2.79**	13.6**
Debts	.879	.488	.770	1.22	10.5**
Cultr	1.29	1.13	1.96*	2.03*	15.4**
Socdsr	.790	1.17	1.37	1.32	.296
Total	.919	1.23	1.77	2.32**	14.6**

Note. The values represent F ratios.

* $p < .05$. ** $p < .01$.

Table 4
Comparison of Variances for Scales by Categorical Variables
(n=664)

Scale	Variable				
	Gender	Major	Marital Status	Class	Ethnicity
Triang	12.3**	1.47	.274	.529	2.83*
Commun	.561	1.28	.768	.539	.666
Intim	3.05	1.02	1.73	.404	1.77
Trust	3.78	2.11*	1.34	.213	.637
Stress	.720	2.80**	.733	.829	1.25
Devlmt	.057	1.24	1.36	.660	2.41*
Rigidb	5.02*	.967	.347	1.02	.601
Diseng	.000	1.73	1.12	1.84	2.29
Diffub	.598	.654	.663	1.09	.284
Enmesh	.349	.946	2.08	1.02	.689
Scpgt	3.92*	1.91	.304	1.40	1.59
Roles	1.98	.681	.802	.772	2.29
Denial	3.51	2.97**	2.63	1.81	1.76
Loyal	.971	2.29*	.416	.839	2.05
Power	2.77	1.86	.806	1.17	.498
Stagnt	3.45	4.17**	1.66	1.25	.963
Behcon	.288	2.55*	5.72**	.691	2.72*
Prbslv	4.56*	1.69	1.64	.477	.861
Projtn	10.7**	2.07*	2.60	2.13	2.70*
Intell	.421	.129	.577	.748	1.44
Famorg	.473	1.94	.234	1.21	2.37
Explitn	.882	1.47	2.39	3.35**	2.60*
Debts	1.44	1.99	2.14	.995	.230
Cultr	7.64**	1.04	1.00	.627	1.78
Socdsr	3.06	.974	.084	2.11	.376
Total	2.98	2.79**	.920	.734	1.31

Note. The values represent Bartlett-Box F ratios.
* $p < .05$. ** $p < .01$.

Table 4 (continued)

Scale	Variable				
	# Children in Family	Birth Order	Mother Eductn	Father Eductn	Family Status
Triang	1.32	.969	2.07*	.767	.276
Commun	.678	.894	1.01	.429	.776
Intim	.220	2.10	.573	.336	.531
Trust	2.11	1.88	.941	1.18	1.77
Stress	1.45	.919*	2.19*	.789	1.81
Devlmt	1.62	2.13*	1.63	.373	1.48
Rigidb	1.80	.802	2.29*	1.95*	.533
Diseng	1.22	1.28	1.57	.513	1.31
Diffub	1.51	1.93	1.23	.699	2.95*
Enmesh	.920	.914	.643	1.06	1.02
Scpgt	.494	1.20	1.04	1.17	1.82
Roles	1.48	1.35	.719	.900	1.04
Denial	.953	1.18	1.08	1.28	.898
Loyal	1.03	1.16	.760	.161	.860
Power	1.52	.738	.976	.473	.348
Stagnt	1.92	.746	1.93*	.759	1.96
Behcon	3.03**	.785	2.40**	1.30	3.84**
Prbslv	1.05	1.17	1.38	.806	1.35
Projtn	1.62	4.24**	1.91*	1.55	1.04
Intell	1.64	2.20*	.412	.469	5.18**
Famorg	.446	1.09	1.35	.760	1.62
Explitn	2.27*	2.41*	2.82**	1.25	4.00**
Debts	.845	1.65	2.34*	.878	2.30
Cultr	1.18	1.90	2.69**	.651	5.27**
Socdsr	1.21	.708	1.01	1.50	.505
Total	1.66	1.74	1.70	.843	2.24

* $p < .05$. ** $p < .01$.

Note. The values represent Bartlett-Box F ratios.

Table 5

Correlation between Scales and Continuous Variables

Scale	Variable		
	Age (n=654)	GPA (n=571)	College Credits (n=632)
Triang	-.072	.042	-.034
Commun	-.095*	-.020	.012
Intim	-.139**	.005	-.013
Trust	-.057	.026	.039
Stress	-.097*	-.049	-.038
Devlmt	-.145**	.002	-.019
Rigidb	-.165**	.107*	-.046
Diseng	-.040	.019	.084*
Diffub	-.125**	-.003	-.045
Enmesh	-.012	.010	-.046
Scpgt	-.058	.021	-.003
Roles	-.023	.053	.004
Denial	-.147**	-.022	-.023
Loyal	-.046	.015	.008
Power	-.153**	.042	-.036
Stagnt	-.157**	.003	-.029
Behcon	-.047	.030	.071
Prbslv	-.119**	.004	-.002
Projtn	-.067	.003	-.030
Intell	.050	-.045	-.004
Famorg	-.129**	.018	-.105**
Explitn	-.135**	.042	-.059
Debts	-.089*	.041	-.040
Cultr	-.133**	-.008	-.044

* $p < .05$. ** $p < .01$.

Table 6
Reliability Analysis

	Reliability Coefficients					
			Alternate Forms			
Scale	Cronbach's Alpha (N=664)	Test Retest (N=76)	A/A (N=19)	A/D (N=20)	D/A (N=19)	D/D (N=18)
Triang	.74	.81	.68	.81	.88	.86
Commun	.83	.90	.90	.88	.90	.96
Intim	.81	.93	.94	.98	.89	.92
Trust	.62	.90	.92	.90	.91	.87
Stress	.85	.91	.92	.92	.89	.89
Devlmt	.80	.91	.96	.91	.88	.92
Rigidb	.68	.84	.90	.75	.90	.87
Diseng	.80	.80	.83	.92	.79	.54
Diffub	.59	.79	.56	.90	.71	.85
Enmesh	.13	.59	.58	.70	.73	.42
Scpgt	.67	.80	.33	.91	.76	.90
Roles	.72	.74	.80	.79	.61	.82
Denial	.83	.90	.89	.94	.83	.92
Loyal	.36	.82	.83	.83	.77	.88
Power	.70	.89	.87	.94	.86	.95
Stagnt	.87	.95	.93	.97	.95	.93
Behcon	.72	.86	.85	.87	.89	.86
Prbslv	.90	.87	.87	.92	.83	.82
Projtn	.65	.77	.63	.81	.78	.83
Intell	.48	.78	.65	.72	.85	.85
Famorg	.87	.92	.84	.95	.93	.89
Expltn	.71	.89	.65	.96	.90	.90
Debts	.84	.90	.82	.93	.94	.91
Cultr	.70	.90	.92	.86	.96	.86
Socdsr	.69	.74	.88	.67	.82	.75
Total	.98	.99	.99	.99	.99	.99

Note. "A" = ascending order; "D" = descending order.

Table 7
Correlation between the Social Desirability Scale and Scales

Scale	Social Desirability Scale r (n=664)
Triang	-.213**
Commun	-.231**
Intim	-.232**
Trust	-.223**
Stress	-.231**
Devlmt	-.191**
Rigidb	-.199**
Diseng	-.268**
Diffub	-.236**
Enmesh	-.023
Scpgt	-.240**
Roles	-.166**
Denial	-.240**
Loyal	-.257**
Power	-.193**
Stagnt	-.219**
Behcon	-.225**
Prbslv	-.222**
Projtn	-.197**
Intell	-.094*
Famorg	-.167**
Expltn	-.242**
Debts	-.297**
Cultr	-.107**

* $p < .05$. ** $p < .01$.

Appendix A

Family Interaction Inventory

Name or ID #:_____

Gender: M__ F__ Age:_____ GPA:_____

College Major:_____ College Credits Earned:_____

Marital Status: Single___ Married___ Divorced___

Year in College: Fr__ So__ Jr__ Sr__ Gr__ Other__

Ethnicity: White__ Black__ Hispanic__ Asian__ Other__

Please indicate the number of children in your family (including self):_____ Which number are you?_____

Please indicate the highest educational level achieved by both parents (grades = 1-12, college = 13-16, graduate school = 17): Mother_____ Father_____

Please circle the statement number or letter which best describes your family's status as you were growing up:

1.Parents remained married and living together.

2.Parents divorced\deceased and I was raised primarily by:
a.my mother

b.my father

c.someone else

3.None of the above describes my family as I was growing up.

*Note: Please explain if none of the above adequately describes your situation:_____
_____

Directions

What follows are a series of statements which might describe your family of origin. Please read each statement carefully and circle the response that you feel best describes the experiences of your family as you were growing up. Note that your answers can range from Strongly Disagree to Strongly Agree, or somewhere in between, as indicated below:

SD = "I Strongly Disagree."
D = "I Disagree."
U = "I am Undecided."
A = "I Agree."
SA = "I Strongly Agree."

	Statements	Strongly Disagree		Undecided		Strongly Agree
1.	I felt equally close to both of my parents.	SD	D	U	A	SA
2.	During disagreements, members of my family could openly express feelings to resolve differences.	SD	D	U	A	SA
3.	I feel we are an intimate family.	SD	D	U	A	SA
4.	I trust my family, and feel that they trust me.	SD	D	U	A	SA
5.	We were able to cope with stressful events.	SD	D	U	A	SA
6.	We successfully dealt with major life changing events.	SD	D	U	A	SA
7.	When I was younger there were times when my parents felt comfortable playing with me.	SD	D	U	A	SA
8.	Family time is important to me.	SD	D	U	A	SA
9.	As a child, I could generally go to my room and enjoy my privacy.	SD	D	U	A	SA
10.	I almost never felt responsible for my brothers and sisters.	SD	D	U	A	SA
11.	One member of my family seldom was blamed for our problems.	SD	D	U	A	SA
12.	Sometimes it has been hard for me to go on with my work when I was not encouraged.	SD	D	U	A	SA
13.	Everyone in my family had identified tasks which they agreed to do.	SD	D	U	A	SA
14.	My family has a realistic picture of our problems.	SD	D	U	A	SA
15.	I would never lie to protect my parents.	SD	D	U	A	SA
16.	My parents were seen as equals in the family.	SD	D	U	A	SA
17.	We accept problems and are willing to work on them.	SD	D	U	A	SA
18.	I typically obeyed my parents.	SD	D	U	A	SA
19.	My family took a positive approach to solving problems.	SD	D	U	A	SA
20.	When things go wrong we don't blame each other.	SD	D	U	A	SA
21.	My parents are not overly emotional.	SD	D	U	A	SA
22.	My parents seem to have resolved their differences with their parents.	SD	D	U	A	SA
23.	Members of my family never took advantage of each other in a malicious way.	SD	D	U	A	SA
24.	My parents never made me feel obligated to repay them in any way.	SD	D	U	A	SA
25.	My family's beliefs about education are similar to those of other families I have seen.	SD	D	U	A	SA
26.	I have sometimes felt resentful when I didn't get my way.	SD	D	U	A	SA
27.	One of my parents was not closer to me than the other.	SD	D	U	A	SA
28.	There was a time during most days when my family set aside time to talk.	SD	D	U	A	SA
29.	My parents were able to openly express their love for each other.	SD	D	U	A	SA
30.	I consider myself a trusting person.	SD	D	U	A	SA
31.	During times of family stress, we were able to talk about the problem.	SD	D	U	A	SA
32.	My family responded to change effectively.	SD	D	U	A	SA
33.	My parents are not overly set in their ways.	SD	D	U	A	SA
34.	Family is more important than outside interests.	SD	D	U	A	SA
35.	We were encouraged to develop our own individual hobbies.	SD	D	U	A	SA
36.	I seldom feel my parents continue to control my life.	SD	D	U	A	SA

Statements	Strongly Disagree		Undecided		Strongly Agree
37. No one person in my family is always in trouble.	SD	D	U	A	SA
38. No matter who I was talking to, I was always a good listener.	SD	D	U	A	SA
39. Household chores were shared equally by everyone in the family.	SD	D	U	A	SA
40. We let people outside the family see us for who we really are.	SD	D	U	A	SA
41. I have seldom been hurt myself when trying to be helpful to my family.	SD	D	U	A	SA
42. My parents seldom seemed to compete with each other for control of the family.	SD	D	U	A	SA
43. It is acceptable to talk about problems in my family.	SD	D	U	A	SA
44. The rules in my family were acceptable to me.	SD	D	U	A	SA
45. We were able to work together when solving problems.	SD	D	U	A	SA
46. Each member of my family has about the same amount of problems.	SD	D	U	A	SA
47. My parents rarely lost their temper.	SD	D	U	A	SA
48. My parents are comfortable around their relatives.	SD	D	U	A	SA
49. I trust members of my family not to take advantage of me.	SD	D	U	A	SA
50. Neither of my parents have made me feel guilty for the things they have given me.	SD	D	U	A	SA
51. My family seems to be like most other families.	SD	D	U	A	SA
52. There have been occasions when I took advantage of someone.	SD	D	U	A	SA
53. I seldom sided with one parent against the other.	SD	D	U	A	SA
54. I seldom had to second guess what my parents were thinking.	SD	D	U	A	SA
55. We touch a lot in my family.	SD	D	U	A	SA
56. My parents almost never made promises that they didn't follow through with.	SD	D	U	A	SA
57. My parents deal with stress effectively.	SD	D	U	A	SA
58. Through the years, we have grown closer as a family.	SD	D	U	A	SA
59. There were not overly strict rules in my family.	SD	D	U	A	SA
60. We value doing things together in my family.	SD	D	U	A	SA
61. Each family member has many friends outside of the family.	SD	D	U	A	SA
62. I seldom feel that I am over-involved with other members of my family.	SD	D	U	A	SA
63. There is no one in my family we all pick on.	SD	D	U	A	SA
64. I have always been willing to admit it when I've made a mistake.	SD	D	U	A	SA
65. We openly discussed and agreed who would do what chore in my family.	SD	D	U	A	SA
66. We preferred to face our problems openly rather than ignore them.	SD	D	U	A	SA
67. I would never steal for my family.	SD	D	U	A	SA
68. In my family, the children were consulted by my parents when major decisions were made.	SD	D	U	A	SA
69. Family members work out their problems rather than ignore them.	SD	D	U	A	SA
70. The children in my family were well behaved.	SD	D	U	A	SA
71. In my family, we openly discussed our problems and then arrived at a solution together.	SD	D	U	A	SA
72. Members of my family are able to own up to their problems.	SD	D	U	A	SA

Statements	Strongly Disagree		Undecided		Strongly Agree
73. Another member of my family can be sad and it doesn't overly effect me.	SD	D	U	A	SA
74. My parents have a good relationship with their parents.	SD	D	U	A	SA
75. I can expect to get as much love as I give in my family.	SD	D	U	A	SA
76. Neither of my parents have ever made me feel as if I owed them something.	SD	D	U	A	SA
77. The way I was raised was similar to the way other people I have known were raised.	SD	D	U	A	SA
78. Sometimes I've tried to get even rather than forgive and forget.	SD	D	U	A	SA
79. Neither of my parents were jealous of the relationship I had with the other parent.	SD	D	U	A	SA
80. Members of my family communicated well with one another.	SD	D	U	A	SA
81. I felt loved and supported by my family.	SD	D	U	A	SA
82. In general you can trust most people you meet.	SD	D	U	A	SA
83. We almost never ignored stressful events.	SD	D	U	A	SA
84. As I was growing up, my parents usually understood what I was going through.	SD	D	U	A	SA
85. My parents are not so headstrong that they could never change.	SD	D	U	A	SA
86. In my family we don't take each other for granted.	SD	D	U	A	SA
87. My parents liked and encouraged my friendships with others.	SD	D	U	A	SA
88. I don't get too wrapped up in my family's issues.	SD	D	U	A	SA
89. Members of my family are seldom critical of any one particular member.	SD	D	U	A	SA
90. I have never been irked when people expressed ideas different from my own.	SD	D	U	A	SA
91. I was given responsibility while growing up.	SD	D	U	A	SA
92. My parents seldom avoided family problems.	SD	D	U	A	SA
93. I have never lied to get my parents out of trouble.	SD	D	U	A	SA
94. One of my parents seldom bossed the family around.	SD	D	U	A	SA
95. It seems as if my family was willing to change for the better when needed.	SD	D	U	A	SA
96. When my parents punished me, I knew why.	SD	D	U	A	SA
97. The members of my family were able to solve individual and family problems easily.	SD	D	U	A	SA
98. My parents know me as I really am.	SD	D	U	A	SA
99. When one family member was sad it rarely affected the whole family.	SD	D	U	A	SA
100. My parents have or did have a good relationship with their parents.	SD	D	U	A	SA
101. I seldom felt used as I was growing up.	SD	D	U	A	SA
102. My parents gladly and unselfishly gave us what they could.	SD	D	U	A	SA
103. I am proud of my family's history.	SD	D	U	A	SA
104. There have been times when I was quite jealous of the good fortune of others.	SD	D	U	A	SA
105. I seldom felt that one of my parents supported me more than the other.	SD	D	U	A	SA
106. We discuss our family problems openly.	SD	D	U	A	SA
107. We could express feelings freely in our family.	SD	D	U	A	SA
108. I was confident that my parents would act in my best interest.	SD	D	U	A	SA

Statements	Strongly Disagree / Undecided / Strongly Agree
109. Members of my family were able to respond calmly during times of crisis.	SD D U A SA
110. My family is willing to make changes when needed.	SD D U A SA
111. The children were sometimes given a say and allowed to set their own rules.	SD D U A SA
112. In my family, all of us cooperated with each other.	SD D U A SA
113. Family members talk to each other without worrying about hurting each other's feelings.	SD D U A SA
114. It is important for family members to have their own space.	SD D U A SA
115. My family takes responsibility for family problems rather than blaming one person.	SD D U A SA
116. I have sometimes been irritated by people who ask favors of me.	SD D U A SA
117. Members of my family were all given equal privileges and responsibilities.	SD D U A SA
118. We faced our family problems openly.	SD D U A SA
119. I don't feel like I have to please my parents.	SD D U A SA
120. My parents consulted each other when making major decisions.	SD D U A SA
121. We work hard to solve the problems in my family.	SD D U A SA
122. My parents were reasonable when it came to discipline.	SD D U A SA
123. We are good at solving problems together.	SD D U A SA
124. My parents were able to meet their own needs without relying on the children.	SD D U A SA
125. I was able to become upset without upsetting the rest of the family.	SD D U A SA
126. My parents were not mistreated when they were children.	SD D U A SA
127. Neither of my parents demanded more than I could give.	SD D U A SA
128. Neither of my parents ever made me feel guilty.	SD D U A SA
129. I am proud to be a part of my family.	SD D U A SA
130. I have never deliberately said something that hurt someone else's feelings.	SD D U A SA

Please circle the number that best describes your answer to the following question:

As I think about my responses to the above statements, I would say that they most describe my relationship with my:

1. Mother.
2. Both parents, but mostly my mother.
3. Both parents the same.
4. Both parents, but mostly my father.
5. Father.